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Asia Pacific Humanitarian Leadership Paper (**Localizing Seismic Resilience: An ultimate Journey across Bureaucratic Ambiguities**)

1 Introduction

The April and May 2015 earthquakes in Nepal saw over half a million houses damaged or destroyed, almost 9,000 people died and thousands of people were displaced.¹ Almost 85% of the houses made of stone masonry in mud mortar were found to be damaged, and these types of houses predominate in rural areas.² Almost none of the collapsed houses, particularly in rural areas, appeared to comply with existing National Building Code (NBC) standards. Principally, the code has been in practice for more than a decade, but the implementation was limited to urban municipalities only. Massive casualties and severe building damages were an obvious indication of significant NBC implementation gaps. It is also quite illustrative that development of the standards alone will not produce the anticipated outcome unless appropriately implemented according to the given local context. This key consideration was missing while strategizing NBC implementation, even after the earthquake.

Tearfund Nepal designed and piloted an integrated and comprehensive capacity development package for safer housing construction to address the NBC implementation gaps at local level in a more pragmatic and collaborative way. Masons' training followed by intensive 'on the job' immersion while building demonstration 'model houses', local level community orientation on safer construction including IEC (Information, Education and Communication) materials distribution and onsite demonstration of model house construction site are key to this approach. The package also includes TOT (Training of Trainers) on seismic-resilient building construction technology particularly for government engineers deployed in housing reconstruction. Through this approach, Tearfund managed to enhance the local skills and capacity, significantly contributing to seismic-resilient housing and settlements. This approach has also demonstrated an appropriate way of localizing seismic resilience at the community level. Tearfund became the first agency to complete a significant number of earthquake resilient houses fully-compliant to national building standards. This approach proved efficient in refining masons' traditional practice and attitude; in fact, this was another hindering element in implementing building standards at the local level. To obtain government approval for piloting this approach, it was first necessary to navigate through complex bureaucratic channels, particularly at the central level. Even after getting approval from the local authority, an agency has to mediate multiple implementation hurdles at the central level. Through a genuine localized approach and excellent demonstration of the outcome, the approach not only demonstrated its excellence, but also persuaded the government to adopt the whole approach. The whole process was an illustration of the struggles of humanitarian leadership in engaging with authorities to explore possible alternative approaches in localizing pre-existing building standards more efficiently and effectively. This has also outlined an innovative advocacy approach in wisely handling policy level strategic ambiguities in the middle of a disaster response.

2 Underlying Reasons for Building Damage

There are various contributing factors which can damage a building during an earthquake. Improper site selection, inappropriate shape, size and design, quality of materials and workmanship, underlying geological form and many others could have influenced the stability of the building. Building standards are answers to many of these constituents, but of course, precise standards alone rarely produce the desired result. An appropriate

blend of sound standards, a suitable implementation approach and strategy supported by consistent institutional arrangements are essential; these appear to have been inadequately organised or missing in this context.

2.1 National Building Code (NBC) Implementation Gap

Nepal's national building code was published in 2003, and the implementation pilot began from one of the capital city's adjacent municipalities. In expanding implementation coverage, it took more than a decade simply to reach all of the municipalities in Nepal. Even then, more than 3900 villages were unenforced. Many of the municipalities implementing the building standards were also struggling to enforce compliance at the field level. The huge numbers of buildings damaged during the 2015 earthquakes further illustrates the compliance dilemma. The building standard implementation gap was identified as a key underlying reason for the considerable number of damaged buildings, and the Post Disaster Need Assessment (PDNA) report has outlined inadequate community awareness, insufficient skills and competency of the artisans, engineers and builders as major gaps.³

2.2 National building Code Implementation Approach

Production and announcement of technical standards are vital, but essentially require localized efforts in delivering those standards to targeted communities in order for them to understand, acknowledge and own them. It has been almost fifteen years since the building code enactment. Ironically, awareness of it and acknowledgement is woefully inadequate. Even in those places with relatively better awareness, a reluctance to adopt standards is quite apparent at the local level, considering the noncompliance demonstrated widely during the earthquake in 2015. Immediately after the earthquake, the government considerably revised the code as a general practice. However, once again the improvement needed in the implementation approach was barely recognized. The Government approach as such is more supply-driven in nature, and its inefficiency is already revealing. This limits partnership, collaboration and localized co-creation.

3 Comprehensive Integrated Approach

The urgent need to train masons, engineers, households and communities must be scaled up to many relevant authorities in order to attain the seismic-resilient building construction targets. Even before the 2015 earthquake, the building standard implementation strategy recognized this crucial requirement. However, the severe consequences of the earthquake questioned its efficacy in implementation. Following years of experience, it was quite evident that a few trainings and orientations in isolation are barely able to change the year-long practices people are so accustomed to. Based on observation and experience, anything which people do not consider local may be difficult to persuade them of because people tend to believe that adopting something foreign could be sophisticated and too difficult. Many agencies tried to demonstrate model houses which were constructed by advanced contractors and skilled imported masons, but in many instances, people are reluctant to imitate them at the local level. This is because it can be harder for local people to own something which is constructed by advanced contractor and imported masons. In addition, this can be perceived as something sophisticated because a local person did not construct it.

Tearfund decided to design and pilot an integrated comprehensive package for safer building construction. The key aspiration behind the process was to identify pragmatic ways to address such implementation gaps at the local level. This approach comprehensively enhanced skills, confidence and the existing practices of local masons, households and communities. The concept considered the local socio-economic context, existing technical competence and requirements, the government's strategic priority, and the essence of local institutions, local practices and traditions. Thus designed approach remained substantially complementary in narrowing the building standard implementation gaps at the local level and proved to be of genuine significance in expediting housing reconstruction efforts competently in disaster aftermath. However, the efforts to convince the respective central authority while piloting the approach was extremely challenging. The comprehensive package which was designed was comprised of the following key components:

- **Masons Training:** This seven-day intensive training course includes safer construction principles and on-site demonstration exercises. A total of 712 masons all around ten different villages were trained.

- **Model House:** The masons who participated in the seven-day masons' training construct the model houses. This offers an 'On-the-job' training opportunity for them to practice and adopt earthquake resistant building construction techniques and skills. Model Houses are also demonstration sites for community orientations. The community acquires illustrative understanding of earthquake resistant building construction essentials through such demonstrations. Model Houses thus completed are handed over to pre-selected extremely vulnerable HHs. Each Model House also incorporates eco-friendly features which includes provision of a rainwater harvesting gutter, improved cook stoves, solar panel for lighting and a lightning arrester. A total of 108 Model Houses were constructed in ten different villages.
- **Community Orientation:** Information, education and communication materials on safer demolition and construction techniques including a safer construction supervision checklist were distributed during the orientation. The orientation also included presentations on earthquake preparedness and safer construction practices. Model House construction site demonstrations were another key activity to enable a community to better understand earthquake resistant building construction theory in practice. The project comprised ninety events, covering around five thousand households.
- **Training of Trainers (ToT) for Government Engineers:** A ToT on 'Earthquake Resistant Building Construction Technology' for government engineers was organized, after contextualizing the training curriculum prepared by the Department of Urban Development and Building Construction (DUDBC). The curriculum was contextualized to address post-earthquake needs. Some of the trainees were immersed to seven days masons training as trainee facilitators so that they could be certified as a competent trainer. These were the engineers responsible for ensuring the quality of reconstruction of the houses damaged during earthquakes in 2015. While implementing the project, a total of 150 government technical officers were trained.

3.1 Essential Underlying the Success

Genuine Localisation: Understanding and Capitalizing Existing Local Resources

Immediately after the earthquake, many agencies were aggressively assessing current needs; in the meantime, only a handful were engaged in identifying what exactly was already in place that could be further built on. The tendency to overlook existing local capacity and resources is common in both development and humanitarian assistance programs. One agency's attempt to produce a building standard to support the housing reconstruction efforts after the earthquake, which in fact was already in place, was an illustration of such tendencies. Recruiting local experts with contextual understanding could facilitate achieving a localized mind-set which can appreciate local resources, capacity and its enhancement needs. In this case, the recruitment of a local expert has heavily complemented the process of achieving a localized perspective while designing the project and its implementation. Indeed, it was beneficial in understanding available local standards, traditional and cultural practices, available local resources and capacities, government priorities, reconstruction strategy, bureaucratic dynamics, community collaboration and stakeholder engagement.

Having someone local with substantial contextual experience and expertise and letting him lead the project was a huge comparative advantage. While many agencies with expatriates heading up the project were scanning the environment, the agency with a local project lead was already well-advanced in the formulation and implementation of the project. This remained crucial in identifying the key challenges that paved the way toward the formulation of such a pragmatic, integrated approach.

Substantial use of local resources and capacity after necessary enhancement as required made this approach locally attractive. In many instances, technically-advanced contractors are recruited and skilful masons are brought in to construct the model houses. In contrary to the usual practice, this approach insisted in training local masons, then capacitating and deploying them to construct the model house using mostly local materials. Not a single unknown material was introduced during model house construction; the only alteration was incorporating seismic-resistant components with enhanced design, workmanship and quality. This boosted local confidence in both masons and the community. The community perceived this house as being less sophisticated and easily

adoptable, because their own local masons rather than any advanced outsourced contractors had constructed it. As the approach was localised, construction materials were predominantly local and designs were compatible to local needs, tradition and culture: many of the owner-driven houses subsequently built using grants replicated the model house exactly.

Integrated Approach

The National Building Code had existed for more than a decade, during which time many efforts were made in its implementation. Masons training events were held, but such sporadic trainings, lasting for just a couple of days, were realised to be inadequate on their own in changing their long-standing practices and mind-set. Community awareness campaigns were organized, but the community could not acknowledge and own the essence of the message because very limited efforts were made to simplify and localize the message practically. Engineers and designers were guided in how to follow the building standards, but results shows that it was simply taken for granted that this would improve compliance. Municipalities were enforcing the code but the field level compliance was poor, essentially due to inadequate collaboration and integration among relevant implementing actors.

Through this new approach, masons were provided with an opportunity to immerse themselves in constructing complete model houses immediately after completing a 7-day training. Such on-the-job engagement offered them an opportunity to practice, test and excel in the learnings they acquired through the training, which also challenged their own long-standing practices and attitudes. The persons training those masons were also deliberately designated to supervise the model house construction work, so that the message remained consistent throughout the process and trainees therefore had very limited room to miss-remember the knowledge while practicing their learning.

Distribution of IEC material and a safer construction checklist with simple illustrative messages, model house construction site demonstration, earthquake preparedness and safer construction presentations made community orientations lively, interactive and understandable on a practical level. Engineers were equipped with the opportunity to learn the theory, observe the application, rehearse by themselves and practice the learning through hands-on, field-level application.

Government enforcement was thus co-created by means of such integrated capacity-building and collaboration among relevant implementing actors, which proved to be widely efficient. Almost every household in the project area has decided to incorporate earthquake resistant elements complying with national building standards while reconstructing their houses following the implementation of this integrated approach.

Appropriate Planning Blend

This was a balanced, synergistic blend of appropriate participatory project planning. While identifying needs, capacity and resources, the project was completely demand-driven and rights-based. Several field assessments, focus group discussions, interviews and workshops were organised systematically from the outset. Local stakeholder engagement and the local authority's consensus were key to project formulation in addition to consistent understanding of the government's priorities. Various sharing and feedback sessions among local government actors were structured carefully at multiple project planning stages. Expert appraisal with localised contextual understanding was instrumental in pursuing the appropriate project constituents. This systematic approach helped in localizing the project through the beneficiaries' ownership and local authority's collaboration, engagement and genuine co-creation. Such localized efforts and energy ultimately proved to be complementary in mediating the bureaucratic ambiguities at the central level; it was also a compelling force to drive the project over hurdles and through difficulties.

Shared Ownership and Co-Creation

Tearfund mediated or avoided the bureaucratic hurdles wherever possible, while maintaining rigorous compliance to local standards. Local level coordination and collaboration among stakeholders, communities, government agencies and political parties were always vital to its undertakings, which essentially also facilitated bureaucratic negotiation at the central level. Even after having local-level project endorsement, central-level bureaucratic ambiguities were still apparent. However, the project implementation was committed to as soon as

the local approval was granted. Various local level ceremonies and celebrations were planned and organized in cooperation with all the relevant stakeholders, from both local and central levels. Such events in addition to collaborative project planning were always beneficial in demonstrating shared stakeholder ownership at the public level. Each of the stakeholders was promised timely communication and engagement so that all interested parties could give their opinion and feedback in each small project component. From cradle to grave shared ownership of the project was established among local stakeholders and communities through partnership, collaboration, co-creation and accountability. Community level bottom-up project planning, collaborative formulation and participatory implementation throughout the entire project cycle was a genuine example of effective multiple stakeholder engagement in practice. The persistence of these was crucial in harmonizing shared ownership and informed decision-making.

Rigorous Standard Compliance

All relevant technical staff were trained intensively in the practical use of building standards. Building construction supervision using a monitoring checklist was developed according to national building standards and pertinent staff were trained in how to use these in practice. Each technical officer was taught to follow the building standards rigorously. On many occasions, bureaucratic delays in approval, monitoring and the necessary validation was common, yet project momentum was never disrupted due to these reasons. Because of the self-regulation of standard compliance, it was possible to continue the project even during such bureaucratic ambiguities. Widespread replication of the model houses and integral incorporation of the seismic resilient elements in housing reconstruction at the community level demonstrates the local confidence in this approach.

Appropriate Team Engagement

The approach was new to Tearfund itself, so implementing staff were thoroughly oriented before starting the process. Program orientation workshops at various project stages were fundamental in assuring the participation and involvement of every single staff member while developing activity schedules and action plans. Such preparatory events contributed significantly to the whole project team in understanding, envisioning, acknowledging and implementing the project as a whole, and their individual role in particular. The total project was divided into separate key milestones, and activity details were outlined in a detailed action plan. Various review and reflection sessions were carried out among implementing staff during the project, and these were critical in understanding complementary as well as hindering factors, which was essential for identifying possible appropriate courses of action. The efforts and contributions of each project individual was recognised, appreciated and celebrated after accomplishing each of the key milestones.

Demonstrating Results

Agencies are obliged to demonstrate results to their donors, which is appropriate; however, it is often omitted to do the same for the community on many occasions. This approach was more focused in building trust with communities and local institutions, and demonstrating the results at the local level. Despite the central government's delay and reluctance in endorsing the approach at the beginning, efforts to liaise and update them with progress and results were never compromised. Through tireless efforts, the project managed to interact with and receive government ministers, parliamentarians, and relevant senior bureaucrats to demonstrate the impact in reconstruction, which played a vital role in shifting the bureaucratic mind-set towards this project approach. Although central level endorsement was still not forthcoming, the project always managed to have someone pertinent from a central level authority during each of its field level ceremonies, and strategically utilised the occasion to demonstrate the local impact of the project. Following several interactions, demonstration visits and revealing, undeniable impact, central government eventually decided to endorse the approach. Not only this, but in due course, government decided to adopt the whole approach under its document entitled 'Training Strategy for Disaster Resistant Housing Reconstruction' in Nepal.

4 Summary and Conclusion

Genuine localization always starts from asking the right questions to understand local capacity, resources and the need for enhancement. Though it is widely discussed, very few agencies put their efforts into understanding local resources and capacity so that these can be built up further in order to make these local communities resilient in the future. Occasionally, genuine good intent can have unintended repercussions, as in the case of outsourcing advanced contractors to build model houses which could seriously impair local confidence. This is also about trusting local capacity and resources; a completely localized mind-set with total contextual familiarity is essential for this. The project has grasped and assimilated this basic fact very well while designing and piloting the approach. In the project area, more than 50% of the newly constructed houses have imitated the exact model house design during reconstruction, which is overwhelming evidence of the pragmatic applicability and adoptability of the approach.

Blaming government systems and bureaucracy rarely provides any resolution. Agencies pledging themselves to a 'third world' country in particular should not overlook the fact that they have committed to pursue their efforts in all given circumstances. In fact, these countries need assistance precisely because they have bureaucracy, and less efficient systems and practices. In such cases, real pragmatic contextual understanding is essential, which can often be capitalized on by recruiting local experts.

Working with local level authorities could be relatively easier when compared to central level ones, or vice versa in exceptional cases. It is essential to understand such dynamics where bureaucratic ambiguities are prevalent. Having an ally at the local level in a firm shared ownership, in many instances, could lay a strong foundation while moving such a project forward despite inadequate bureaucratic clarity. Recognition and shared ownership through partnership, engagement, collaboration, reporting and demonstration both at local and central levels requires persistent efforts, particularly in such an ambiguous situation. Government is always a key player, and this should not be undermined; however, NGOs can demonstrate how the same thing could be done differently while producing a greater impact.

Tearfund is the first agency to complete substantial numbers of houses post-earthquake in Nepal, and people are constructing seismic resilient, NBC-compliant houses in its project areas. Masons' practices have been improved significantly and a newly oriented community are putting their efforts into holding them accountable. Government engineers receiving Tearfund's training have changed their building standard application practices and have a more pragmatic understanding. The central government authority responsible for reconstruction has eventually endorsed this approach and adopted it as the government's national training strategy. This demonstrates an innovative approach to wisely handling bureaucratic ambiguities during a disaster response and complementing localized capacity enhancement.

Endnotes

¹ <http://nra.gov.np/download/details/21>

² <http://nra.gov.np/news/details/249>

³ <http://nra.gov.np/download/details/21>